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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,444	09/12/2000	Keiichi Iwamura	35.C14834	6601

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EXAMINER

EDWARDS, PATRICK L

ART UNIT PAPER NUMBER

2621

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/660,444

Applicant(s)

IWAMURA, KEIICHI

Examiner

Patrick L Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on June 22, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 7-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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### **DETAILED ACTION**

1. The response received on June 22, 2004 has been placed in the file and was considered by the examiner. An action on the merits follows.

#### ***Response to Arguments***

2. The applicant's arguments, filed on June 22, 2004, have been fully considered. A response to these arguments is provided below.

#### **Drawing Objections**

*Summary of Argument:* The applicant has submitted a replacement drawing sheet for Figure 1 with the label "prior art". Additionally, the applicant has amended the specification so that reference numeral 805 from Figure 9 is referred to. The applicant argues that these two modifications should eliminate the drawing objections from the previous office action (see applicant's remarks pg. 10, 4<sup>th</sup> and 5<sup>th</sup> paragraphs).

*Examiner's Response:* The examiner agrees with the applicant's arguments and appreciates the applicant's efforts to resolve these issues. The previous drawing objections are hereby withdrawn.

#### **37 CFR 1.75 Claim Objections**

*Summary of Argument:* The applicant has amended the claims in view of the claim objections from the previous action, and argues that all the grounds for objection have been addressed and properly remedied (see applicant's remarks pg. 10, final paragraph).

*Examiner's Response:* The examiner agrees with the applicant's arguments and appreciates the applicant's efforts to resolve these issues. The claim objections from the prior action are hereby withdrawn.

#### **Prior Art Rejections**

*Summary of Argument:* The applicant traverses the rejections of claims 1, 2, 5, and 7-9 over Yamadaji (USPN 6,192,138). Applicant suggests that the watermark information to be embedded, and the image in which the watermark information is embedded into, is not the same image (page 11 of applicant's remarks). The applicant further explains that, in the Yamadaji reference, image data is compressed and then is embedded into image data different than that which was compressed.

*Examiner's Response:* The applicant's remarks have been fully considered but are not persuasive. Yamadaji discloses that "the image data" captured by the CCD 101 (from Figure 4), is compressed and then is stored in the external memory 103 (see Yamadaji col. 6 lines 59-61). Yamadaji further discloses that this compressed image data is recorded into "the image data" (i.e. embedded) as a digital watermark.

*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-4, 7-9, 13-15, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, which has language representative of claims 8 and 9, the claim recites that compression data is formed by “compressing the image data at a position where the additional information is embedded”. The claim goes on to recite that the “compression data obtained by said compressing means” is embedded into the image data.

This claim language is circular and paradoxical. It creates a problem which is best explained as the common ‘which came first, the chicken or the egg?’ problem. More specifically, the compression means compresses image data at a position where additional information is embedded. Thus, we can assume that the data has already been embedded, and, further, that it must be embedded before the compression means can compress the data. However, the claim goes on to recite that the embedding means embeds the compression data obtained by the compression means. By the same logic, this implies that the compression is a prerequisite for the embedding means.

These two situations, however, are mutually exclusive. If operation A can’t be performed until after operation B is performed, then operation B can not depend on operation A. This is the basic definition of circular logic, and it renders the claim indefinite.

For examination purposes, this part of the claim (and similarly recited claims) will be interpreted as a means for compressing input image data and a means for embedding the compressed image data back into the original image.

Claims 2-4, 7, 20 and 21 are rejected to because they are dependent on indefinite claims.

With regard to claim 13, which has language representative of claims 17 and 19, this claim recites “embedding data compressed by the encrypting means”. This is indefinite because the encrypting means encrypts data, and the compressing means compresses data. The encryption means does not compress any data, and therefore it is unclear which operation is taking place. Is the first embedding means embedding compressed data, or encrypted data?

Claims 14 and 15 are rejected because they are dependent on indefinite claims.

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 7-9, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamadaji (U.S. Patent No. 6,192,138 B1).

As applied to claim 1, Yamadaji discloses an image processing apparatus comprising: input means for inputting image data showing an original image (see Fig. 4: Reference numeral 101 referring to a CCD camera for inputting original image information.); compressing means for compressing at least a part of said image data (see column 8, lines 33-38: The reference describes that the digital watermark can be an image capturing a portrait of the copyright holder. The reference further describes that this image can be the same image that is captured by CCD 101. The reference then describes that this image is converted into a reduce- size picture and JPEG compressed by the digital watermark processor 104 (i.e. compressing means for compressing at least a part of said image data).); and embedding means for embedding compression data obtained by said compressing means into said image data so that it is difficult to be identified by the human eyes by converting a part of said image data (see Fig. 5: Reference numeral 204 referring to an information embedder. This component embeds the watermark by converting a part of the image data. This process makes the watermark difficult to be identified by human eyes.).

As applied to claim 2, Yamadaji discloses that the image data is constructed by a plurality of bit planes (see column 9, lines 61-65: The reference describes that the scanned image data is divided into blocks of 8x8 pixels (i.e. plurality of bit planes) and said embedding means exchanges said compression data to a lower bit plane (see column 10, lines 17-30: The reference describes that image data of block 1 is modified (i.e. exchanged) by the watermark information (i.e. compression data).).

As applied to claim 7, Yamadaji discloses that the image data comprises color components of RGB (see column 9, lines 2-3: The reference describes that the captured image data is color image data. Color image data will have components of RGB.).

As applied to claim 8, which merely calls for the method performed by the apparatus of claim 1, since Yamadaji discloses the apparatus for performing the method, then the method is also disclosed.

As applied to claim 9, which merely calls for a storage medium for storing a processing program that performs the method of claim 8, Yamadaji discloses such a storage medium since all of the processing performed by Yamadaji is performed by computer (see Fig. 5: Reference numeral 102 referring to a digital image data processor).

As applied to claim 20, Yamadaji discloses that the compression means performs reversible compression (Yamadaji col. 12 lines 31-33).

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*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, and 10-19 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamadaji (U.S. Patent No. 6,192,138 B1) and Kankanhalli et al. (the article titled "Adaptive Visible Watermarking of Images").

As applied to claim 13, which is representative of claims 3, 4, and 10, Yamadaji discloses an image processing apparatus comprising: compressing means for compressing image data (see column 8, lines 33-38: The reference describes that the digital watermark can be an image capturing a portrait of the copyright holder. The reference further describes that this image can be the same image that is captured by CCD 101. The reference then describes that this image is converted into a reduce-size picture and JPEG compressed by the digital watermark processor 104 (i.e. compressing means for compressing at least a part of said image data).); encrypting means for encrypting data showing a result of the compression in said compressing means (see column 10, lines 31-37: The reference describes that the watermark data is divided into blocks (i.e. encrypting data showing a result of the compression.); and first embedding means for embedding the data, as an invisible watermark, encrypted by said encrypting means to a first predetermined bit position of said image data. (see Fig. 5 and column 10, lines 15-17: Reference numeral 204 referring to an information embedder that embeds the watermark data that is divided into blocks (i.e. encrypted) into the image data at a position that is previously defined (i.e. predetermined bit position). This process produces an invisible watermark.).

As applied to claim 14, which is representative of claim 11, Yamadaji discloses that information showing said first predetermined bit position of said image data in which the data is embedded by said first embedding means is key information (see column 10, lines 2-30: The reference describes supplemental information that is embedded in the image and that is also used to decode the watermark (i.e. key information).).

As applied to claim 15, which is representative of claim 12, Yamadaji discloses that the compression by said compressing means is a reversible compression (see column 10, lines 50-52: The reference describes that the compression carried out can be reversible compression.).

Claim 13 further calls for a second embedding means for embedding a visible watermark to a second predetermined bit position of the image data. A second embedding means for embedding a visible watermark into an image is absent from Yamadaji; however, Kankanhalli et al., in the same field of endeavor of image processing and the same problem solving area of digital watermarking, discloses such a feature (see page 571, section 3: The

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reference describes embedding a visible watermark into an image by altering pixel values in an image that is segmented into 8x8 blocks. The pixel values that are altered are at a predetermined bit position.)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Yamadaji by added a second embedding means for embedding a visible watermark as taught in Kankanhalli et al. because the use of a visible watermark “convey[s] an immediate claim of ownership, providing credit to the owner. It also prevents or at least discourages, unauthorized use of copyrighted high quality images” (see Kankanhalli et al.: page 568, section 1).

As applied to claim 17, which is representative of claim 16, which merely calls for the method performed by the apparatus of claim 13, since the combination of Yamadaji and Kankanhalli et al. discloses the apparatus for performing the method, then the method is also disclosed.

As applied to claim 19, which is representative of claim 18, which merely calls for a storage medium for storing a processing program that performs the method of claim 17, the combination of Yamadaji and Kankanhalli et al. discloses such a storage medium since all of the processing performed by Yamadaji is performed by computer (see Fig. 5: Reference numeral 102 referring to a digital image data processor).

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamadaji as applied to claim 1 above, and further in view of Manjunath (USPN 6,332,030). The arguments as to the relevance of Yamadaji as applied above are incorporated herein.

With regard to claim 21, which merely calls for the embedding means to embed the data as an invisible watermark, Yamadaji fails to expressly disclose this limitation. Manjunath, however, discloses embedding digital data as an invisible watermark (Manjunath col. 1 lines 50-61). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Yamadaji’s embedding means by producing invisible watermarks as taught by Manjunath. Such a modification would have allowed for a way of hiding the watermarked data, and would have provided a preferable approach to resisting attacks from unauthorized users (Manjunath col. 1 lines 50-61).

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamadaji and Kankanhalli as applied to claim 11 above, and further in view of Manjunath (USPN 6,332,030). The arguments as to the relevance of this combination as applied above are incorporated herein.

With regard to claim 22, which merely calls for the first embedding means to embed a visible watermark and the second embedding means to embed a visible watermark, the combination of Yamadaji and Kankanhalli discloses two embedding means for embedding visible watermarks, but fails to expressly disclose the limitation that the first embedding means embeds an invisible watermark. Manjunath, however, discloses first embedding means which embeds an invisible watermark (Manjunath col. 1 lines 50-61). It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Yamadaji and Kankanhalli by making the first embedding means produce invisible watermarks as taught by Manjunath. Such a modification would have allowed for a way of

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hiding the watermarked data, and would have provided a preferable approach to resisting attacks from unauthorized users (Manjunath col. 1 lines 50-61).

**Conclusion**

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

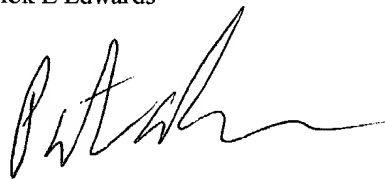
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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